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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/813,117

03/31/2004

Erol Girt

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3703

25227 7590 02/26/2007
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EXAMINER

RICKMAN, HOLLY C

ART UNIT

PAPER NUMBER

1773

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/813,117

Applicant(s)

GIRT ET AL.

Examiner

Holly Rickman

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) 8-13, 18, 19, 23, 24 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 14-17, 21-22, 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. The objection to claim 20 has been overcome by cancellation of the claim.

Claim Rejections - 35 USC § 112

2. The rejections of claims 6 and 20 under 35 U.S.C. 112, second paragraph, are withdrawn in view of Applicant's amendments.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 5, 7, 14, 17, 21 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Nolan (US 2004/0258963).

Nolan discloses a magnetic recording medium having a substrate formed from NiP-coated AlMg, a first crystalline layer, a second crystalline layer formed from an hcp material such as Ru, a third crystalline layer and a magnetic recording layer formed from a CoCr alloy. Each of the crystalline layers is non-magnetic. See paragraphs 98-103, 125-134. The examiner takes the position that the Ru layer taught by Nolan would be capable of providing RKKY

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coupling between the first and third intermediary layer if they were both magnetic by virtue of the fact that is formed of the same material as disclosed by Applicants.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-4, 15, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nolan (US 2004/0258963).

Nolan discloses a magnetic recording medium having a substrate formed from NiP-coated AlMg, a first crystalline layer, a second crystalline layer formed from an hcp material such as Ru, a third crystalline layer and a magnetic recording layer formed from a CoCr alloy. Each of the crystalline layers is non-magnetic. See paragraphs 98-103, 125-134. The examiner takes the position that the Ru layer taught by Nolan would be capable of providing RKKY coupling between the first and third intermediary layer if they were both magnetic by virtue of the fact that is formed of the same material as disclosed by Applicants.

Nolan teaches the use of various materials for the first and third crystalline layers including hcp materials such as Co. It would have been obvious to one of ordinary skill in the art at the time of invention to choose hcp Co materials from the groups of materials disclosed as being suitable for the first and third crystalline layers in view of the functional equivalence of each of the materials disclosed. See paragraphs 129, 132, 144

Allowable Subject Matter

7. Claims 6 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The closest prior art to Nolan fails to teach or suggest the claimed multi-layered intermediary structure in combination with a magnetic layer having a Cr-rich and a Cr-dilute layer containing specific amounts of Cr.

Response to Arguments

8. Applicant's arguments filed 12/6/06 have been fully considered but they are not persuasive.

Applicant argues that the examiner has used improper hindsight in taking the position that "the Ru layer taught by Nolan would be capable of providing RKKY coupling between the first and third intermediary layer if they were both magnetic." Applicant maintains that this is not sufficient to establish a prima facie case of obviousness.

The examiner respectfully disagrees. The claims do not positively require the presence of *RKKY coupling* between *magnetic* layers. Instead, what they require is RKKY coupling "*when* the first intermediary layer and the third intermediary layer are magnetic layers." [Emphasis added]. In fact, the claims actually require that the first or third intermediary layer is *non-magnetic*. Thus, the presence of RKKY coupling is a hypothetical arrangement when both first and third intermediary layers are magnetic. Thus, the examiner's position that Nolan would be

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capable of meeting this hypothetical arrangement is sufficient to establish a prima facie case of obviousness.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Holly Rickman", with a stylized flourish at the end.

Holly Rickman
Primary Examiner
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